



Appl. No. 10/005,647  
Amdt. Dated October 4, 2004  
Reply to Office Action of May 4, 2004  
REPLACEMENT SHEET

Fig. 1

TGGTTGTCCTGGAACCTCACTCTGTAGACCAGGCTGGCCATGAACTCACAGA  
GATCTACCTCCTGAGTGCTGGGATTAAAGGTTTGTGCCACCACCTCCCAAC  
TCTAAGGTGTTTCTTTAAGTTAGGGGCATAGTAAACATTGTTGAGATACTA  
GAGGAACACTGAATGAAAATTTGGACATCTCTGCTTTAGGTTTGTGCTGAG  
CAGTTTGCCTCTTATCTTACCTATGCTGAAAAGTTTGAGTTCATAATTTTG  
AACATGCATATGATAAAATATTCTGGCCGCACATTGAATAAATATATTTTAA  
ATGAACTTACCTTTAAAATGTCAGTAACAACTCTGCATGGTTTTCTTCTTAC  
CTCCATAGGTATGGTCTGAATATGCGTTGTTTGGCAGCTCGGGTCAACTAT  
AAGACTTTGATTATCATCTGTGCGCTATTCACTTTGGTCACAGTACTTTTGT  
GGAATAAGTGTTCCAGCGACAAAGCAATCCAGTTTCCTCGGCACCTTGAGTA  
GTGGATTTCAGAGTGGATGGATTAGAAAAAAGATCAGCAGCATCTGAAAGTA  
ACCACTATGCCAACCACATAGCCAAACAGCAGTCAGAAGAGGCATTTCTC  
AGGAACAACAGAAGGCACCCCCTGTTGTTGGGGGCTTCAATAGCAACGGG  
GGAAGCAAGGTGTTAGGGCTCAAATATGAAGAGATTGACTGTCTCATAAAC  
GATGAGCACACCATTAAAGGGAGACGAGAGGGGAATGAAGTTTTCTTCCA  
TTCACTTGGGTAGAGAAATACTTTGATGTTTATGGAAAAGTGGTCCGAGTA  
TGACGGCTATGATCGATTTGAATTC::TCTCATAGCTATTCCAAAGTCTATGCA  
CAGAGAGCCCCTTATCACCTGATGGTGTGTTTATGTCCTTTGAAGGCTACAATG  
TGGAAGTCCGAGACAGAGTCAAGTGCATAAGTGGGGTTGAAGGTGTACCTTTAT  
CTACACAGTGGGGACCTCAAGGCTATTTCTACCCAATCCAGATTGCACAGTATG  
GGTTAAGTCACTACAGCAAGAATCTAACTGAAAAACCCCCTCATATAGAGGTAT  
ATGAAACAGCAGAAGACAGGGACAAAAACAGCAAGCCCAATGACTGGACTGTG  
CCCAAGGGCTGCTTTATGGCTAGTGTGGCTGATAAGTCAAGATTCACCAATGTT  
AAACAGTTCATTGCTCCAGAAACCAAGTGAAGGTGTATCCTTGCAACTGGGGAAC  
ACAAAAGATTTTATTATTTTCACTTGAACCTCAAGTTCTTAACAAATGGAAGCGTGT  
CTGTGGTTCTGGAGACGACAGAAAAGAATCAGCTCTTCACTGTACATTATGTCT  
CAAATACCCAGCTAATTGCTTTTAAAGAAAGAGACATATACTATGGCATCGGGC  
CCAGAACATCATGGAGCACAGTTACCCGGGACCTGGTCACTGACCTCAGGAAA  
GGAGTGGGTCTTTCCAACACAAAAGCTGTCAAGCCAACAAGAATAATGCCCAA





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GAAGGTGGTTAGGTTGATTGCGAAAGGGAAGGGCTTCCTTGACAACATTACCAT  
CTCTACCACAGCCCACATGGCTGCCTTCTTCGCTGCCAGTGACTGGCTGGTGAG  
GAACCAGGATGAGAAAGGCGGCTGGCCGATTATGGTGACCCGTAAGTTAGGGG  
AAGGCTTCAAGTCTTTAGAGCCAGGGTGGTACTCCGCCATGGCCCAAGGGCAAG  
CCATTTCTACATTAGTCAGGGCCTATCTCTTAACAAAAGACCATATATTCCTCAA  
TTCAGCTTTAAGGGCAACAGCCCCTTACAAGTTTCTGTCAGAGCAGCATGGAGT  
CAAGGCTGTGTTTATGAATAAACATGACTGGTATGAAGAATATCCAACCTACACC  
TAGCTCTTTTGTTTTAAATGGCTTTATGTATTCTTTAATTGGGCTGTATGACTTAA  
AAGAACTGCAGGGGAAAACTCGGGAAAGAAGCGAGGTCCTTGTATGAGCGT  
GGCATGGAATCCCTTAAAGCCATGCTCCCCTTGTACGACACTGGCTCAGGAACC  
ATCTATGACCTCCGGCACTTCATGCTTGGCATTGCCCCCAACCTGGCCCCGCTGGG  
ACTATCACACCACCCACATCAATCAACTGCAGCTGCTTAGCACCATTTGATGAGT  
CCCCAATCTTCAAAGAATTTGTCAAGAGGTGGAAGAGCTACCTTAAAGGCAGCC  
GGGCAAAGCACAACTAG

FIGURE 1  
CONTINUED



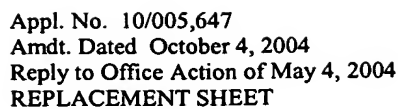


FIG. 4A



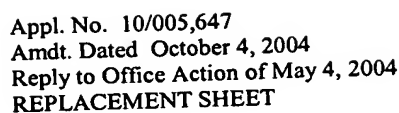
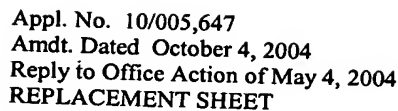


FIG. 4B



[illegible]

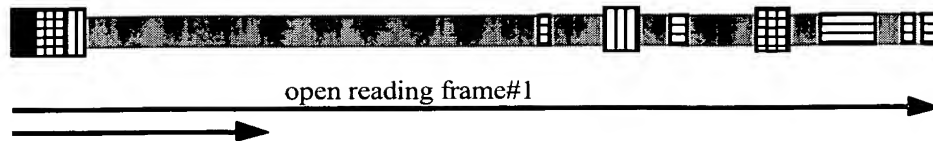




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sig seq-TM  
conserved  
peptide seq  
hotspot

hydrophobic and  
conserved peptide seq.  
hotspots



Hypothetical orientation, **if** inserted into golgi

cytosol->lumen----->cytosol----->lumen

**Key:**



signal sequence,  
highly hydrophobic  
transmembrane (TM)  
sequence



Hydrophobic  
transmembrane (TM)  
or buried sequence



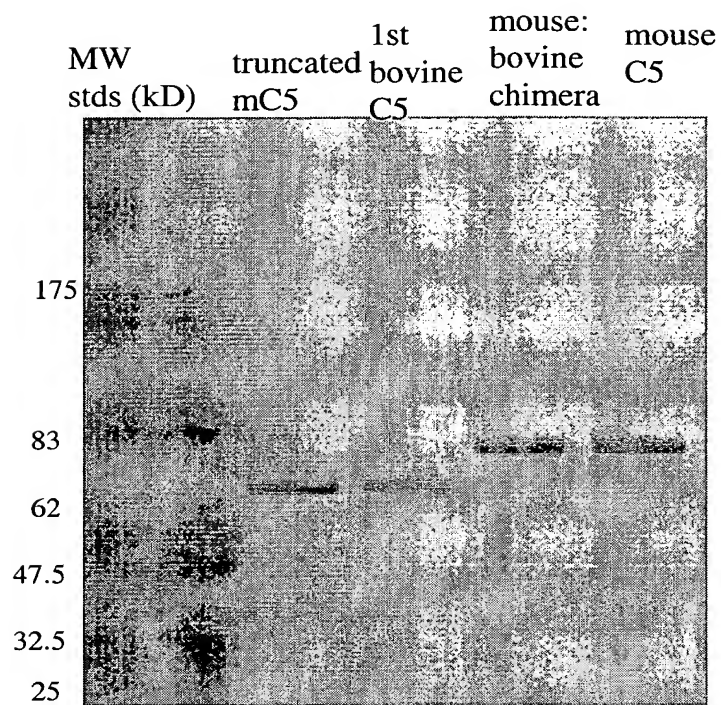
most conserved peptide sequence  
(>50% similarity to C elegans 71.9  
KD hypothetical protein;  
38% similarity to Methanococcus  
hypothetical protein). Note:  
peptide identity between mouse,  
bovine and human > 95%!

FIG. 5





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**Fig. 9**